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B1T
(71) Applicant
Riensch & Held
Danziger Strasse 17
2000 Hamburg 1
West Germany
(72) Inventors
Harald C Justus
Wolf-Peter Wenz
(74) Agents
Gill Jennings & Every

(54) Grease or oil vapour filter

(57) A grease or oil vapour filter for use in a vapour extractor hood such as a cooker hood comprises a sheet of non-woven fabric for filtering grease or oil vapour from a flow of air through it, the sheet having a coating of a grease or oil-soluble colour substance on its downstream face so that migration of the substance until it is visible on the upstream face of the fabric indicates that the fabric is saturated with grease, and further comprises a substance such as activated charcoal which absorbs odours from the air. The substance may be incorporated in the fabric or forms a separate layer bonded to its downstream face.

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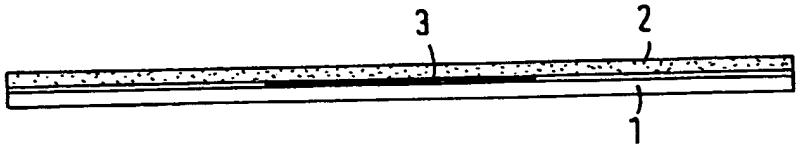

SPECIFICATION

Grease or oil vapour filter

Our Patent Application No. 3822/78 is concerned with a method of detecting the saturation with grease or oil of filter material, for example, for vapour extraction hoods, such as cooker hoods and with sheet filter material for use in the method and having a grease-soluble or oil-soluble coloured coating applied to one face of the sheet filter material, the coating producing, when the filter becomes saturated with grease or oil a change of colour on the other face of the sheet.

The present invention relates to an improvement in filters of the kind described in our Application No. 3822/78.

Grease filters are used domestically in vapour extraction hoods, which operate either with air recirculation or with discharge of the filtered air. In particular, when the filtered air cannot be discharged outside the house, that is when air recirculation is used, it is necessary to provide, in addition to the grease filter material, a device which absorbs substances, especially odiferous substances, which are not held by the grease filter. It is known that fairly large capsules of plastics material may be provided at a substantial distance downstream of the grease filter in the hood and these capsules contain activated carbon or other chemicals for neutralizing odours and purifying the air. These plastic capsules, which occupy a comparatively large space, usually have to be replaced at longer intervals of time than the grease filter material. In normal operation, the grease filter material must be replaced approximately every three months, whereas the more expensive plastics capsules do not need to be replaced until a longer period has elapsed. The periods between servicing of the hoods is governed by the necessity for replacing the grease filter material and often the capsules are replaced at the same time, that is more frequently than is necessary.

According to the present invention, we provide a filter comprising sheet filter material for filtering grease or oil vapour from a flow of air or other gases, the material having two opposed faces through which the gas and vapour flow and having a grease-soluble or oil-soluble coating on only one of the opposed faces, the coating comprising a colouring substance, the colour of which is different from that of the filter material and is invisible from the other of the opposed faces, wherein the filter material also carries a further substance which absorbs or chemically binds odoriferous substances in the flow of air.

Thus, the filter material not only removes the grease or oil vapour from the air, but also purifies and deodorises the air as well. This is especially advantageous in extraction hoods of the recirculation type and the hood is improved by simultaneous replacement of the grease filter and the odour recurring substance.

Activated carbon, kieselguhr, or polyacryl in meta-acrylic acid or a mixture of these substances may be used as the further substance and this is preferably in the form of a granulate or powder. It is possible, either to incorporate this further substance or these further substances into the grease filter material, which may, for example be a non-woven material, or instead to form a separate sheet of non-waven fabric or the like and to bond this separate sheet to the downstream face of the grease filter material in relation to the direction of air and vapour flow through it.

The composition and properties of the additional substance or mixture of substances are selected so that the purpose for which these substances are intended is reliably fulfilled as long as the grease filter sheet material filters out the grease or oil vapour. When the grease filter material is saturated and must be replaced as indicated by the visibility of the colouring substance on the upstream face of the filter material then replacement of the entire filter takes place, i.e. the further substance which absorbs or chemically binds the odoriferous substances is also replaced.

By using the combination filtering and deodorising material in accordance with the invention, extraction hoods can be made thinner and smaller, so that not only is a very compact arrangement frequently achieved, but also material is saved.

An example of sheet filter material in accordance with the invention will now be described with reference to the accompanying drawing which is a cross-section through a sheet of the filter material.

A sheet of non-woven fabric grease filter material 1 has on its downstream face, that is its upper face as seen in the drawing, a so-called carbon mat 2. The carbon mat 2 contains an activated carbon granulate. On the downstream face of the grease filter material 1, a coating 3 is pressed. The coating comprises a grease-soluble or oil soluble colouring substance, the colour of which differs from that of the grease filter material and which, when a specific saturation of the grease filter material is reached, becomes visible on the upstream face of the grease filter material. The coating 3 is as described in our Application No. 3822/78. Instead of activated carbon, other substances or combinations with activated carbon may be employed.

The grease filter material in accordance with this invention can also be used in fried food kitchens in the region of the ceiling as a grease and odour filter.

CLAIMS

1. A filter comprising sheet filter material

for filtering grease or oil vapour from a flow of air or other gases, the material having two opposed faces through which the gas and vapour flow and having a grease-soluble or oil-soluble coating on only one of the opposed faces, the coating comprising a colouring substance, the colour of which is different from that of the filter material and is invisible from the other of the opposed faces, wherein the filter material also carries a further substance which absorbs or chemically binds odoriferous substances in the flow of air.

2. A filter according to Claim 1, in which the further substance comprises activated carbon, kieselguhr and/or polyacryl or meta-acrylic acid to bind unsaturated carbons and acid-responding molecules in the flow of gas.

3. A filter according to Claim 2, in which the further substance is in granular and/or powder form.

4. A filter according to any one of the preceding Claims, in which the further substance is incorporated in a sheet of non-woven fabric which is bonded to the sheet filter material.

5. A filter according to any one of the preceding Claims in which the sheet filter material is a non-woven fabric.

6. A filter according to Claim 1, substantially as described with reference to the accompanying drawings.

7. A grease or oil vapour extraction hood incorporating a filter in accordance with any one of the preceding Claims.

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